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YOUNG & THOMPSON
745 SOUTH 23RD STREET 2ND FLOOR
ARLINGTON, VA 22202

EXAMINER

GREENE, JASON M

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/031,588

Applicant(s)

SUZUKI ET AL.

Examiner

Jason M. Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 4. 6) ☐ Other: .

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on application filed in Japan on 23 May 2000 and 18 May 2001. It is noted, however, that copies of the certified copies have not been received from the International Bureau. If certified copies of the priority documents were not provided to the International Bureau within 16 months of the priority date, Applicants must file certified copies of the JP 2000-151032 and JP 2001-149910 priority documents as required by PCT Rule 17.1(c).

Claims

2. With regard to claims 4 and 9, it appears as though Applicants have mistakenly used the unit of measurement "mm" instead of " μm ". The Examiner suggests Applicants change "mm" to " μm " so that the claims will coincide with the specification. For examination purposes, the units of measurement recited in the claims have been assumed to be μm .

3. With regard to claim 5, the Examiner has interpreted the limitation "wherein the second filter layer has a downstream end, which is exposed" as meaning that the downstream end of second filter layer is open to the airflow and not covered by another

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filter layer. In other words, the Examiner has interpreted the limitation as meaning that the downstream end of the second layer is the downstream end of the air filter.

4. With regard to claim 11, the Examiner suggests Applicants insert the word "with" between the words "integrally" and "with" in line 3 to improve the readability of the claim language.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Published Patent Application JP 2000-70635 in view of Japanese Published Patent Application JP 63-14886.

With regard to claim 1, JP 2000-70365 discloses an air filter comprising a first filter layer (11) impregnated with oil, and a second filter layer (11a) provided on a downstream side of the first filter layer, said second filter layer being composed of a lipophobic layer having an oil-repellant property, each of said first and second filter

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layers being formed of filter paper, and said second filter layer being composed of said lipophobic layer over an entire thickness in Figs. 1-3 and paragraph numbers [0006] to [0043] of the English language translation. It is particularly noted that JP 2000-70365 explicitly teaches the second filter layer being formed as a separate, independent layer in paragraph number [0040].

JP 2000-70365 does not disclose the filter material of said first filter layer having a higher density than filter material of the second filter layer.

JP 63-14886 teaches a similar filter having a first filter layer impregnated with oil having a different density than a second filter layer including a hydrophobic layer in Fig. 1 and pages 1 and 2. Since no translation of any portion of the reference could be located, the concise explanation of the relevance of the reference provided by the Applicants as part of the IDS filed on 23 April 2002 was relied upon by the Examiner in interpreting the teachings of the reference. Specifically, the first paragraph on page 2 of the translated official action issued by the foreign patent office was relied upon.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the density gradient of JP 63-14886 into the air filter of JP 2000-70365 in that varying the densities of filter materials of the first and second filter layers is merely a choice of design. From the teaching of JP 63-14886, one of ordinary skill in the art would have recognized that the densities of the filter materials of the first and second filter layers could have been independently varied to provide an air filter having desired filtration properties for a given application.

With regard to claim 2, JP 2000-70365 discloses the first filter layer and the second filter layer being combined integrally with each other in Figs. 1-3 and paragraph numbers [0006] to [0043] of the English language translation. Since the layers are disclosed as being laminated together, the layers are seen as being integrally combined.

With regard to claims 3 and 8, JP 2000-70365 discloses the air filter further comprising an additional layer (12) in Figs. 1-3 and paragraph numbers [0006] to [0043] of the English language translation.

With regard to claims 4 and 9, JP 2000-70365 discloses the first and second filter layers being formed from the same material having a pore size between 80 and 150 μm in paragraph number [0027] of the English language translation. Therefore, one of ordinary skill in the art would have recognized that if the first and second filter layers were formed from separate materials, then the first filter layer could have been formed having a pore size of 80 μm while the second filter layer was formed having a pore size of 150 μm .

With regard to claims 6 and 10, JP 2000-70365 discloses the second filter layer (11a) being subjected to an oil-repellent treatment and then the first and second filter layers being combined integrally with each other in paragraph numbers [0006] to [0043] of the English language translation.

With regard to claims 7 and 11, JP 2000-70365 does not disclose the first filter layer and the second filter layer being combined integrally with each other, and then said second filter layer being subjected to an oil-repellant treatment and said first filter layer being impregnated with oil.

However, since claim 11 is directed to an air filter, the method by which the article is made is not seen as patentably distinguishing the claimed air filter from the applied prior art. Specifically, the recited air filter will have the same construction regardless of whether the filter layers are combined before or after the oil and oil-repellant are added. The air filter will still comprise a first filter layer impregnated with oil and a second filter layer containing an oil-repellant. While it may be difficult to impregnate the layers with the oil and the oil-repellant after the layers are combined without allowing any of the oil to migrate into the second filter layer and without allowing any of the oil-repellant to migrate into the first filter layer, one of ordinary skill in the art would recognize that such a task could be accomplished using a carefully designed process.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

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7. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Published Patent Application JP 55-114323 in view of Japanese Published Patent Application JP 63-14886.

With regard to claims 1 and 2, JP 55-114323 discloses an air filter comprising a first filter layer (2) impregnated with oil, and a second filter layer (3) provided on a downstream side of the first filter layer, said second filter layer being composed of a lipophobic layer having an oil-repellant property, each of said first and second filter layers being formed of filter paper, and said second filter layer being composed of said lipophobic layer over an entire thickness, wherein the first and second filter layers are combined integrally with each other in Figs. 1-3 and lines 1-13 of the English language translation. The Examiner notes that the phenol resin will impart an oil-repellant property to the second layer.

JP 55-114323 does not disclose the filter material of said first filter layer having a higher density than filter material of the second filter layer.

JP 63-14886 teaches a similar filter having separately formed first and second layers, wherein the first filter layer impregnated with oil has a different density than a second filter layer including a hydrophobic layer in Fig. 1 and pages 1 and 2. Since no translation of any portion of the reference could be located, the concise explanation of the relevance of the reference provided by the Applicants as part of the IDS filed on 23 April 2002 was relied upon by the Examiner in interpreting the teachings of the

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reference. Specifically, the first paragraph on page 2 of the translated official action issued by the foreign patent office was relied upon.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the independent layers and density gradient of JP 63-14886 into the air filter of JP 55-114323 in that forming the first and second layers independently and varying the densities of filter materials of the first and second filter layers is merely a choice of design. From the teaching of JP 63-14886, one of ordinary skill in the art would have recognized that by forming the first and second layers independently, the densities of the filter materials of the first and second filter layers could have been independently varied to provide an air filter having desired filtration properties for a given application.

With regard to claim 5, JP 55-114323 discloses the second filter layer having a downstream end which is exposed in Figs. 1-3 and lines 1-13 of the English language translation.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Hunter et al., Townsley, Tanaka et al., and Harrington references disclose similar air filters. The Kitta et al. reference teaches phenol resin being oleophobic (lipophobic) in col. 2, line 66 to col. 3, line 7.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (703) 308-6240. The examiner can normally be reached on Tuesday - Friday (7:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (703) 308-1261. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jason M. Greene
Examiner
Art Unit 1724



jmg
July 11, 2003

DUANE SMITH
PRIMARY EXAMINER


7-14-03